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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,602	09/23/2003	Chang-Seob Kim	61610096US	9753
58027 7590 04/05/2007 H.C. PARK & ASSOCIATES, PLC 8500 LEESBURG PIKE SUITE 7500 VIENNA, VA 22182			EXAMINER ALEJANDRO, RAYMOND	
			ART UNIT 1745	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	
3 MONTHS			04/05/2007	
			DELIVERY MODE PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/667,602

Applicant(s)

KIM, CHANG-SEOB

Examiner

Raymond Alejandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-22 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 and 10-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/20/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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DETAILED ACTION

Response to Amendment

This Examiner's letter is being provided in response to the amendment dated 03/19/07.

The rejection under statute 102 has been overcome. Refer to foregoing amendment for more information concerning applicant's rebuttal arguments and remarks. However, the present claims are finally rejected over new grounds of rejection as set forth infra and for the reasons of record:

Election/Restrictions

1. Claims 4-6 and 10-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 04/05/06.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

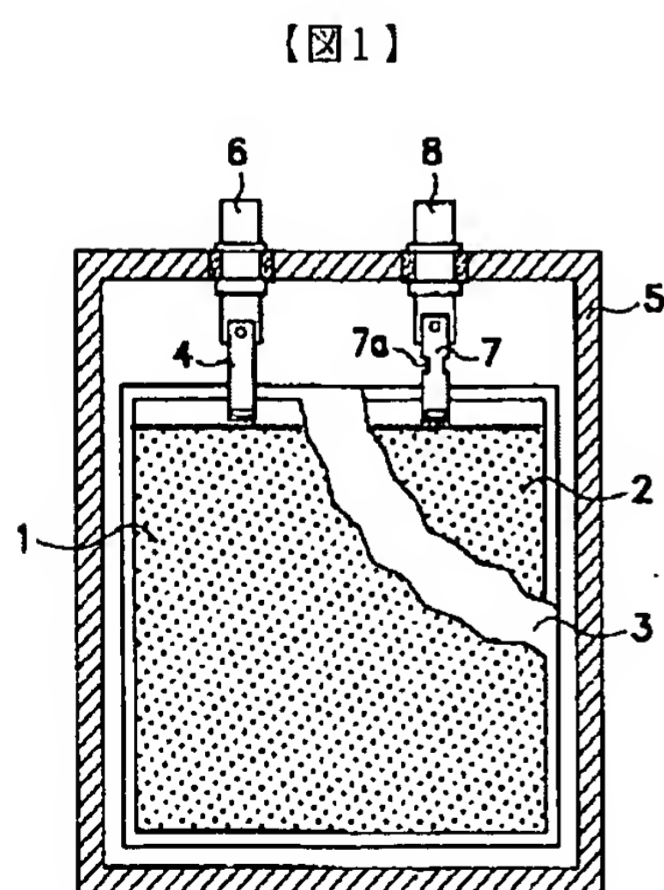
3. Claims 1, 3 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese publication 10-214614 (herein called the JP'614).

The present claims are directed to an electrode assembly wherein the disclosed inventive concept comprises the specific current interrupter.

As to claim 1:

The JP'614 discloses an electrode assembly comprising a positive electrode 1 and a positive electrode lead 4; a negative electrode 2 and a negative electrode lead 7 (P. 0002/ CLAIM 1/FIGURE 1). The electrode assembly is a laminated (stacked) and wound assembly (P. 0011).

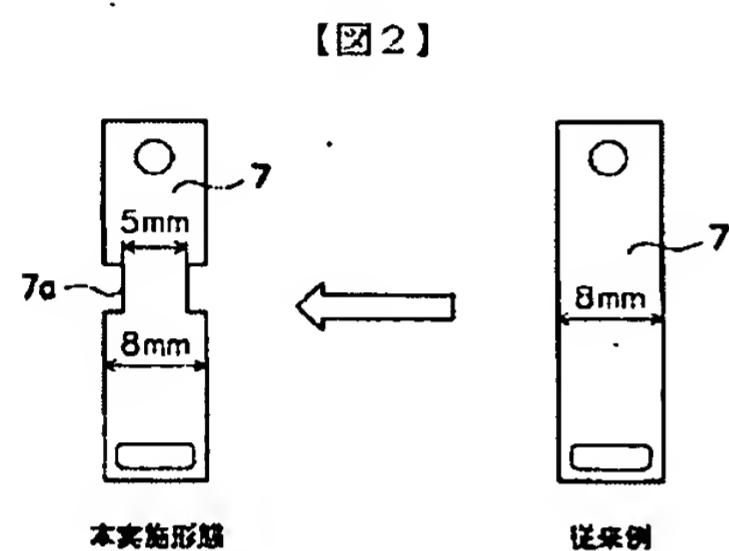
Figure 1 below illustrates the specific configuration of the electrode assembly:



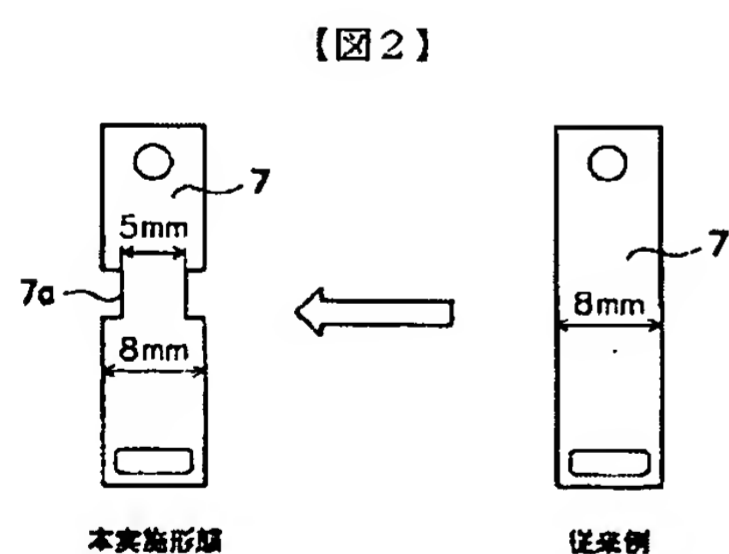
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A constricted portion 7a is made at the center between an upper and lower side of the negative electrode lead 7 (ABSTRACT). Accordingly, as for the negative electrode, the constricted portion 7a sets a current limit (ABSTRACT/ P. 0014-16).

Figure 2 below also illustrate constricted portion 7a having at least a curved portion forming a substantially right angle on the negative electrode lead 7.



As shown in **Figure 2**, section 7a has a smaller cross-sectional area than a cross-sectional area of the negative electrode lead (See Figure 2). *As can be appreciated from the illustration of Figure 2 below, the cross-sectional area of the constricted portion 7a is smaller than the cross-sectional area of the adjacent portions.*



As to claim 3:

It is apparent from **Figure 2** above that section 7a forms a notch and/or an indentation and/or an angular cut in the edge (See Figure 2).

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As to claim 7:

At least, the cross sectional area near section 7a can be represented by 5 mm x L, while the cross sectional area of the negative electrode can be represented by 8mm x L (See Figure 2). *Thus, the cross sectional area near section 7a is about 0.625 times that of the cross sectional area of the negative electrode.*

As to claim 8:

The negative electrode lead is made of copper (P. 0014).

The JP'614 discusses an electrode assembly as discussed above. Nevertheless, the preceding prior art reference fails to expressly disclose the specific curved portion out of plane from a planar section.

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to make the electrode lead of the JP'614 by having the specific curved portion out of plane from a planar section because it is noted changes in shape is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed electrode lead is significant or critical. *In re Dailey*, 149 USPQ 47. It is also noted that aesthetic design changes having no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. *In re Seid*, 73 USPQ 431. (See MPEP 2144.04 [R-1])

Legal Precedent as Source of Supporting Rationale)

4. (At least) Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the publication CN 247355 (herein called the CN'355).

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The CN'355 discloses an electrode assembly comprising a positive plate, and a negative plate welded to respective electrical terminals (*electrode leads electrically connected to the positive/negative plates*) and being separated by a separating plate wherein the plates are stacked and wound (ABSTRACT/CLAIMS 1-9/ Page 1, lines 4-15). Reference numeral 3 represents a current interrupter adapted to interrupt current or break electric circuit when there is an increased in current (ABSTRACT/FIGURE 1). **Figure 1** illustrates section 3 having a cross-sectional area smaller than the cross-sectional areas of adjacent sections (FIGURE 1).

Examiner's note: *the preamble limitation "for a lithium ion cell" refers only to ultimate intended utility. The present claims are merely directed to an electrode assembly per se.*

The CN'355 shows an electrode assembly as discussed above. Nevertheless, the preceding prior art reference fails to expressly disclose the specific curved portion out of plane from a planar section.

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to make the electrode lead of the CN'355 by having the specific curved portion out of plane from a planar section because it is noted changes in shape is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed electrode lead is significant or critical. *In re Dailey*, 149 USPQ 47. It is also noted that aesthetic design changes having no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. *In re Seid*, 73 USPQ 431. (See MPEP 2144.04 [R-1])

Legal Precedent as Source of Supporting Rationale)

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2. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over: a) the Japanese publication 10-214614 (herein called the JP'614) and/or b) the publication CN 247355 (herein called the CN'355) as applied to claim 1 above, and further in view of Arai et al 2005/0171383.

The JP'614 is applied, argued and incorporated for the reasons expressed above.

However, the preceding prior art does not expressly disclose the negative electrode lead made of nickel.

Arai et al disclose a battery comprising an electrode assembly including a negative electrode and a positive electrode (P. 0081-0083); wherein the negative electrode lead is made of nickel (P. 0083).

In view of the above, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the negative electrode lead made of nickel of Arai et al in the electrode assembly of the JP'614 because nickel is a suitable conducting metal material.

Thus, the use of a nickel negative electrode lead allows to maintain good electrical conductivity within the electrode assembly.

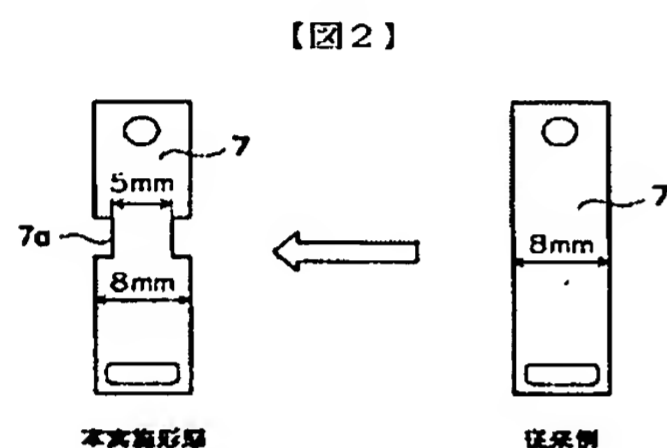
Response to Arguments

5. Applicant's arguments with respect to aforementioned claims have been considered but are moot in view of the new ground(s) of rejection. See rejections under statute 103 as set forth hereinabove.

The following responses to applicant's arguments are maintained herein for the reasons of record as they address certain arguments advanced by the applicant.

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3. Applicant has now advanced the argument that the newly added limitation “*the current collector is arranged in a curved portion of the negative electrode lead*” is neither disclosed nor taught by the prior art reference. The examiner respectfully traverse this argument. For instance, Figure 2 below illustrates constricted portion 7a having at least a curved portion forming a substantially right angle on the negative electrode lead 7.



In advancing this argument, applicant appears to be equating the projecting portion of his electrode lead or the non-planar configuration of his electrode lead to the limitation “*a curved portion*” of the electrode lead. While applicant’s projecting portion or non-planar configuration maybe representative of a curved portion, such a curved portion is not limited only to applicant’s configuration. To assist in determining whether this is right or not, the examiner went to the Merriam-Webster’s Collegiate Dictionary 10th Edition for a definition of the term “curve” and found that “curve” is defined as “bent or formed into a curve”, or “to have or take a turn, change or deviation from a straight line or plane surface”. Therefore, it is believed that constricted portion 7a of the negative electrode 7 of the prior art is either bent or formed into a curve or at least has or takes a turn, change or deviation from a straight line. Therefore, the prior art still anticipates the presently claimed invention.

4. The gist of applicant’s arguments against the JP’614 reference is based on the assertion that “claim 1 recites, inter alia, an electrode assembly for a lithium ion cell...Specifically, Inoue

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(the JP'614) fails to teach application of Inoue's invention to a lithium ion cell". However, this assertion is insufficient to overcome the preceding rejection. In response to applicant's arguments, the recitation "for a lithium ion cell" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

5. In response to applicant's argument that his invention is "*an electrode assembly for a lithium ion cell*", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

6. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed

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invention must be expressly suggested in any one or all of the references. (*Emphasis supplied*→) Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). *In this case, the motivation provided by the examiner is based on the fact that nickel is a conducting metal material which has been recognized in the field of applicant's endeavor as a suitable material for purposes of constructing electrode structures or variants thereof. As a result, those of ordinary skill in the art would find that by using nickel as part of any electrode structure good electrical conductivity within the electrode assembly is achieved.*

7. In response to applicant's argument that “*While the Office Action asserts that nickel may be substituted as an electrode lead, the more important question is whether there is suggestion to substitute nickel for Inoue's constricted portion 7a in the dimensions disclosed by Inoue, and whether nickel would be suitable to perform the function of Inoue's constricted portion...*”, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). *The combination of the JP'614 reference with Arai et al'383 is a solid combination for the reasons expressed supra. In consequence, such a combination represents a concrete prima-facie case of obviousness not only for addressing and showing all the claimed limitations but also for providing specific guidance to recognize that nickel can be used as an electrode lead. This provides sufficient specificity to arrive at the conclusion that nickel is a suitable material being used for making electrode leads for the benefits of enhancing conducting characteristics.*

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Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond Alejandro
Primary Examiner
Art Unit 1745



RAYMOND ALEJANDRO
PRIMARY EXAMINER